IN THE UNITED STATES
PATENT AND TRADEMARK OFFICE

Appl. No. : 10/552,774
Applicant(s): Bernhard Gleich, et al.
Filed: October 12, 2005
TC/A.U.: 3700/3768
Examiner: Vani Gupta
Atty. Docket: DE 030117 US1
Confirmation No.: 2136
Title: ELASTOGRAPHY DEVICE AND METHOD FOR DETERMINING AND IMAGING OF MECHANICAL AND ELASTIC PARAMETERS OF AN EXAMINATION OBJECT

APPEAL BRIEF

Honorable Assistant Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

In connection with the Notice of Appeal dated **August 12, 2010**, Applicants provide the following Appeal Brief in the above-captioned application.

1. Real Party in Interest

The real party in interest as assignee of the entire right and title to the invention described in the present application is Koninklijke Philips Electronics, N.V., having a principal place of business at Groenewoudseweg, 1Eindhoven, NL 5621 BA.

2. Related Appeals and Interferences

There are no known related appeals or interferences at this time.

3. Status of the Claims

Claims 1-9, 19 and 20 are pending in the application at this time. Claims 10-18 and 21-34 were previously cancelled as a result of a requirement of restriction.

4. Status of the Amendments

In response to a final Office Action, a Response under Rule 116 was filed on June 8, 2010. An Advisory Action was mailed on August 4, 2010. A Notice of Appeal was filed on August 12, 2010. There are no presently pending amendments.

5. Summary of the Claimed Subject Matter[1]

Referring to claim 1:

A device for determining mechanical, particularly elastic, parameters of an examination object, comprising at least one arrangement for determining the spatial distribution of magnetic particles in at least one examination area of the examination object, comprises a means for generating a magnetic field with a spatial profile of the magnetic field strength such that there is produced in at least one examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength, a means for detecting signals which depend on the magnetization

[1] In the description to follow, citations to various reference numerals, drawings and corresponding text in the specification are provided solely to comply with Patent Office Rules. It is emphasized that these reference numerals, drawings and text are representative in nature, and in not any way limiting of the true scope of the claims. It would therefore be improper to import any meaning into any of the claims simply on the basis of illustrative language that is provided here only under obligation to satisfy Patent Office rules for maintaining an Appeal.

in the examination object, particularly in the examination area, that is influenced by a spatial change in the particles, and a means for evaluating the signals so as to obtain information about the, in particular temporally changing, spatial distribution of the magnetic particles in the examination area. The device also comprises at least one means for generating mechanical displacements, in particular oscillations, at least in and/or adjacent to the examination area of the examination object. (Please note that no drawings were filed in the application. Therefore, there are no reference numbers presented in this Summary. Kindly refer to page 2, line 32 through page 4, line 4; and page 5, line 5 through page 7, line 32.)

6. Grounds of Rejection to be Reviewed on Appeal

The grounds of rejection to be reviewed on Appeal is[2]:

The rejection of claims 1-9, 19 and 20 rejected under 35 U.S.C. § 102(a) as allegedly being unpatentable over *Kraus, Jr., et al.* (U.S. Patent 6,470,220). For at least the reasons set forth below, Applicants respectfully submit that all pending claims are patentable over the applied art.

7. Argument

I. The rejection of claims 1-9, 19 and 20 under 35 U.S.C. § 102(a) in view of *Kraus, Jr., et al.*

At the outset Applicants rely at least on the following standards with regard to proper rejections under 35 U.S.C. § 102. Notably, a proper rejection of a claim under 35 U.S.C. § 102 requires that a single prior art reference disclose each element of the claim.[3] Anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference.[4] Alternatively, anticipation requires that each and every

[2] The provisional rejections obvious-type double patenting have been considered and are not appealed at this time. If necessary and proper after all other rejections have been withdrawn, Applicants will provide suitable terminal disclaimers to render these rejections moot.
[3] *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983).
[4] *See, e.g., In re Paulsen,* 30 F.3d 1475, 31 USPQ2d 1671 (Fed. Cir. 1994); *In re Spada,* 911 F.2d 705,

element of the claimed invention be embodied in a single prior art device or practice.[5] For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention.[6]

a. Claim 1

Claim 1 recites:

A device for determining mechanical, particularly elastic, parameters of an examination object, comprising a) at least one arrangement for determining the spatial distribution of magnetic particles in at least one examination area of the examination object, comprising ***a means for generating a magnetic field with a spatial profile of the magnetic field strength such that there is produced in at least one examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength****, a means for detecting signals which depend on the magnetization in the examination object, particularly in the examination area, that is influenced by a spatial change in the particles, and a means for evaluating the signals so as to obtain information about the, in particular temporally changing, spatial distribution of the magnetic particles in the examination area; and b) at least one means for generating mechanical displacements, in particular oscillations, at least in and/or adjacent to the examination area of the examination object.*

Again, Applicants respectfully submit that the applied art fails to disclose at least the emphasized feature of claim 1. In rejecting the emphasized portion of claim 1, the Office Action directs Applicants to "SQUID" at column 7, lines 60-67, and to col. 13, line 9 through column 14, line 25 of *Kraus, Jr., et al.* The portion of column 7 relied upon describes SQUID sensors, which are magnetometers useful in detecting extremely

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15 USPQ2d 1655 (Fed. Cir. 1990).

5 *See, e.g., Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopaedics, Inc.*, 976 F.2d 1559, 24 USPQ2d 1321 (Fed. Cir. 1992).

6 *See, e.g., Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ2d 1001 (Fed. Cir. 1991).

weak magnetic fields. The portions of column 13 and 14 relied upon describe application of time-varying spatial distribution of magnetic fields by movement of coils or by rotation of the field distribution by a set of computer controlled magnetic induction coils that are distributed and phased to produce the desired field distributions and rotational frequency. However, while phase lag of particle precession in viscous environments are described, there is no disclosure of producing *in at least one examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength*. Furthermore, while a system for conducting both treatment and temperature measurement are described including a combination of electromagnetic field-generating coils and squid devices, there remains a deficiency of producing *in at least one examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength* as is specifically recited in claim 1. (Kindly refer to column 13, lines 10-40 and line 63-column 14, line16 of *Kraus, Jr., et al.* for support for these assertions.)

In the Response to Arguments on page 4, the Office Action asserts (with emphasis in original):

"Examiner respectfully disagrees and points out that claim 1 includes language that modifies the aforementioned feature such that it is "influenced by a spatial change in the particles, and means for evaluating the signals so as to obtain information about the [sic], in particular temporally changing, spatial distribution of the magnetic particles in the area." *The passage(s) in column 13-column 14* of Kraus, Jr. et al. suggest as much (such as "time varying distribution of the magnetic field (col. 13, line 9);" and "amount of magnetic material can vary depending upon the magnetic strength per unit volume" in an examination area (col. 14, ll. 31-33). Kraus, Jr. may not describe the feature in question in exactly the *same* words, but the teaching are there."

At the outset, Applicants respectfully submits that even assuming arguendo that the time varying distribution of the magnetic field is disclosed, the claim features *at least one examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength*. This is not disclosed in *Kraus, Jr., et al.* Specifically, the **temporal variation** of the magnetic field of *Kraus, Jr., et al.* has no

spatial restriction. Therefore, there is no areal dependence of the magnetic field strength disclosed. Moreover, the Advisory Action asserts:

"Furthermore, Krause [sic] suggests "time-varying spatial distributed magnetic fields" applied to the volume of interest. As is known, and as Krause [sic] suggests (col. 13, ll.75-67), magnetic fields vary/change with time, and as these fields change electric fields are generated (hence "electromagnetic fields" mentioned by Krause [sic])."

Applicants note that while *Kraus, et al.* discloses that a "spatial distribution of the magnetic field is desired (see column 13, line 9 of *Kraus, et al.*), there is no disclosure of any spatial relationship of (at least) one examination area: specifically, there is no disclosure of a first part-**area** of an examination area having a low magnetic field strength and a second-part **area** of the examination area having a higher magnetic field strength. It is unclear from the single reference in *Kraus, et al.* what a spatial-distributed magnetic field is. As noted above, *Kraus, et al.* is directed to the temporal variation of a magnetic field.

The Office Action further states:

"Furthermore, Kraus, Jr., et al. discusses means for producing magnetic fields so that they are different from on are to the next ("alternating fields")(col. 13, line 66)". It would be inherent that they vary such that one field would have higher or lower in magnetic field strength than a nearby field would have."

Column 13, line 65-column 14, line 3 of *Kraus, Jr., et al.* discloses:

"A combination of alternating fields from, e.g., multiple electromagnets, with a phase difference between the fields is designed so as to yield a rotation of the overall field upon the desired body. In effect there would be a stirring action. In this manner the magnetic material would undergo rotation within the rotating field and result in viscous heating of the medium or in this case the cellular area in the vicinity of the body whereat the magnetic material containing substance is attached."

Thus, a rotation of the field to result in a viscous heating for treatment is disclosed, but there is no disclosure of *at least one examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength*. Rather, field rotation is disclosed.

Moreover, Applicants respectfully submit that the claim of inherency is not properly established. To this end, M.P.E.P. § 2112 IV provides that:

> *EXAMINER MUST PROVIDE RATIONALE OR EVIDENCE TENDING TO SHOW INHERENCY*
>
> *The fact that a certain result or characteristic **may** occur or be present in the prior art is not sufficient to establish the inherency of that result or characteristic. In re Rijckaert, 9 F.3d 1531, 1534, 28 USPQ2d 1955, 1957 (Fed. Cir. 1993) (reversed rejection because inherency was based on what would result due to optimization of conditions, not what was necessarily present in the prior art); In re Oelrich, 666 F.2d 578, 581-82, 212 USPQ 323, 326 (CCPA 1981). "**To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference**, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999).*

(emphasis added).

Furthermore, a claim rejection must be based on objective evidence of record, and cannot be supported merely on subjective belief and unknown authority.[7]

No such concrete evidence has been provided by the Examiner here, nor did the Examiner submit an affidavit as required by 37 C.F.R. § 1.104(d)(2) if this proposed motive were based on facts within his personal knowledge (see M.P.E.P. § 2144.03). Applicants respectfully request that such an affidavit be provided if a rejection continues

[7] See, e.g., M.P.E.P. § 2144.03; *In re Lee*, 277 F.3d at 1344-45, 61 USPQ2d at 1434-35 (Fed. Cir. 2002); *In re Zerko*, 258 F.3d at 1386, 59 USPQ2d at 1697.

to be made without a citation of any objective evidence.

Accordingly, and for at least the reasons set forth above, Applicants respectfully submit that *Kraus, Jr., et al.* fails to disclose at least one feature of claim 1. As such, a *prima facie* case of anticipation has not been established, and claim 1 is patentable over the *Kraus, Jr., et al.* Furthermore, claims 2-9, 19 and 20, which depend immediately or ultimately from claim 1, are patentable for at least the same reasons and in view of their additionally recited subject matter.

Conclusion

In view the foregoing, applicant(s) respectfully request(s) that the Examiner withdraw the objection(s) and/or rejection(s) of record, allow all the pending claims, and find the application in condition for allowance.

If any points remain in issue that may best be resolved through a personal or telephonic interview, the Examiner is respectfully requested to contact the undersigned at the telephone number listed below.

Respectfully submitted on behalf of:
Philips Electronics North America Corp.

/William S. Francos/

by: William S. Francos (Reg. No. 38,456)
Date: October 11, 2010

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APPENDIX

Claims on Appeal

1. A device for determining mechanical, particularly elastic, parameters of an examination object, comprising a) at least one arrangement for determining the spatial distribution of magnetic particles in at least one examination area of the examination object, comprising a means for generating a magnetic field with a spatial profile of the magnetic field strength such that there is produced in at least one examination area a first part-area having a low magnetic field strength and a second part-area having a higher magnetic field strength, a means for detecting signals which depend on the magnetization in the examination object, particularly in the examination area, that is influenced by a spatial change in the particles, and a means for evaluating the signals so as to obtain information about the, in particular temporally changing, spatial distribution of the magnetic particles in the examination area; and b) at least one means for generating mechanical displacements, in particular oscillations, at least in and/or adjacent to the examination area of the examination object.

2. A device as claimed in claim 1, characterized by at least one means, in particular at least one coil arrangement, for changing the spatial position of the two part-areas in the examination area so that the magnetization of the particles changes locally.

3. A device as claimed in claim 1, characterized in that the means for generating mechanical displacements or oscillations comprises at least one oscillating element, an oscillation generator and an oscillation transmission means for transmitting oscillations from the oscillation generator to the oscillating element and/or at least one sound source, in particular an ultrasound source.

4. A device as claimed in claim 3, characterized in that the oscillation generator is arranged outside and at a distance from the magnet arrangement and the oscillating element and the oscillation transmission means are made of non-metallic and/or metallic material.

5. A device as claimed in claim 1, characterized in that the means for generating the magnetic field comprise a gradient coil arrangement for generating a magnetic gradient field which in the first part-area of the examination area reverses its direction and has a zero crossing.

6. A device as claimed in claim 1, characterized by a means for generating a temporally changing magnetic field that is superposed on the magnetic gradient field, for the purpose of moving the two part-areas in the examination area.

7. A device as claimed in claim 1, characterized by a coil arrangement for receiving signals induced by the temporal change in the magnetization in the examination area.

8. A device as claimed in claim 1, characterized by means for generating a first and at least a second magnetic field that are superposed on the magnetic gradient field, where the first magnetic field changes slowly in time terms and with a high amplitude and the second magnetic field changes rapidly in time terms and with a low amplitude.

9. A device as claimed in claim 8, characterized in that the two magnetic fields run essentially perpendicular to one another in the examination area.

19. The use of the device as claimed in claim 1 for determining the internal pressure or the change in internal pressure of gas bubbles present in an examination object, in order to image body parts and/or organs.

20. The use of the device as claimed in claim 1 for examining, particularly in real time, rubber components, tires or components based on thermoplastic elastomers, or tissue or organs, in particular respiratory organs.

APPENDIX

Evidence

APPENDIX

Related Proceedings